UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,172	08/07/2003	Guruprasad Ramarao	200300376-1	2912

22879   7590   07/16/2007
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ART UNIT	PAPER NUMBER
2135	

MAIL DATE	DELIVERY MODE
07/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

Office Action Summary

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 August 2003</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some *   c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

DETAILED ACTION

Claims 1-20 were examined and are pending.

Claim Objections

Claims 1, 3, 9-17, and 20 are objected to because of the following informalities:

1. In claim 1, "said mapped port assignment" should be recited in line 6 instead of "said port assignment" so as to be consistent with what is recited in line 5. A similar informality is found in claim 3.

2. All recitation of "The port map verification tool" or "the tool" in claims 9-14 should instead be "the network port map verification tool" so as to be consistent with what is recited in line 2 of claim 8.

3. Claim 9 should depend on claim 8 instead of itself.

4. Claims 11 and 12 appear as if they should depend from claim 10 instead of claim 11.

5. In claim 15, "said network server" should be recited instead of "said server" so as to be consistent with what is recited in line 2.

6. It is assumed that claim 16 should depend on claim 15 instead of 17.

7. Claim 17 should depend on claim 15 instead of itself.

8. Claim 20 should recite "said port map verification tool" instead of "said tool" so as to be consistent with what is recited in claim 15.

9. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. Claims 15-20 either directly or indirectly recite "said network", which lacks antecedent basis.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-6, 8-11, 14-18, and 20 are rejected under 35 U.S.C. 102(a) as being anticipated by Copeland III (US 2002/0144156).

Claim 1:

Copeland discloses accessing port binding information (i.e. information listing which ports are actually being used) in a port authorization file (i.e. "seen today" list, see paragraph 64) in said network; querying a port mapper (i.e. "profile list", see paragraph 63) for a mapped port assignment (i.e. map of actual "allowed" ports for "allowed" operations); comparing said mapped port assignment to said port binding information; and initiating a response (i.e. alarm) to said comparing (paragraphs 62-66).

Note that as discussed in the cited paragraphs of Copeland, two lists are kept by his invention (paragraphs 63-64). The "profile list" discussed in paragraph 63 keeps track of the port number of all allowed operations. This "profile list" corresponds to the S_PROFILE and C_PROFILE rows seen in the database tables of Figure 2 and is considered by the examiner to indicate mapped port assignment. The "seen today" list discussed in paragraph 64 keeps track of actual operations seen and the ports used by those operations. The "seen today" list corresponds to the SERVER and CLIENT rows seen in the database tables of Figure 2. The actual ports used are considered by the examiner to be "port binding information".

Note that to determine whether or not a host is operating "Out of Profile" (as discussed in paragraph 65), the port binding information and mapped port assignment as recorded in the "seen today" list and "profile list" must be accessed/queried to obtain the information contained therein so that a comparison could be done to determine if a port is being used which is not listed as allowed in the "profile list". Paragraph 66 indicates that should a port be detected that is in use which is not allowed, an alarm is initiated as a response.

Claim 8:

Copeland discloses:

1. A port assignment file (i.e. "profile list") comprising a port authorization in said network (paragraphs 62-63).

2. A port assignment file verifier (i.e. port profiling engine 155), wherein said verifier is enabled to verify a port assignment against said port authorization (paragraph

66). *The port profiling engine compares ports that are actually seen to be in use with what is authorized to be in use and generates an alert if they are different.*

Claim 15:

Copeland discloses:

1. A network server (paragraph 41).

2. A network client communicatively coupled with said network server via a port (paragraph 41).

3. A plurality of provisionable services (i.e. network services) enabled to communicate with said network server via a plurality of ports (paragraphs 45 and 62).

4. A port map verification tool (i.e. port profiling engine 155) enabled to compare a port assignment to a port authorization in said network (paragraph 66). *The port profiling engine compares ports that are actually seen to be in use with what is authorized to be in use and generates an alert if they are different.*

Claims 2, 9, and 16:

Copeland further discloses wherein said network comprises a utility data center, i.e. server (paragraphs 38-39).

Claim 3:

Copeland further discloses wherein said mapped port assignment comprises static port binding data (paragraph 44 and Fig 2, C_PROFILE and S_PROFILE rows in COMMON SERVICES BIT MAP table).

Note that frequently used services are assigned fixed/static port numbers. The

HTTP service, for example, is bound to static port 80.

Claim 4:

Copeland further discloses wherein said port authorization file comprises fixed

port assignments (paragraph 81 and Fig 2, CLIENT and SERVER rows in COMMON

SERVICES BIT MAP table).

Note that the cited portion of Figure 2 shows that the host uses at least fixed port

80 as both a client and a server. As such, the port authorization file comprises fixed

port assignments indicating which fixed ports were actually used by the host as a client

and/or server.

Claim 5:

Copeland further discloses wherein said port authorization file is generated upon

network initialization (paragraph 74).

Claims 6, 11, and 18:

Copeland further discloses wherein said response comprises an alarm

(paragraph 66).

Claim 9:

Claim 9 is also alternatively rejected for the same reasons given in claim 8. The

wherein clause further recited in claim 9 does not appear to further limit the structure of

the claimed network port map verification tool. Instead, the clause further defines the

network, which is not a part of the claimed network port map verification tool. As such,

the wherein clause further recited in claim 9 is not given patentable weight, see MPEP

2111.04.

Claims 10 and 17:

Copeland further discloses wherein said network port map verification tool is

further enabled to initiate a response, i.e. alarm, to a port assignment anomaly

(paragraph 66).

Claims 14 and 20:

Copeland further discloses wherein said network port map verification tool is

enabled to operate in a remote procedure call environment (paragraph 61).

A client-server environment is a remote procedure call environment since the

server executes various procedures depending on remote requests received from the

client.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7, 12, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Copeland III (US 2002/0144156) in view of Hrabik et al (US 6,988,208).

Claims 7, 12, and 19:

As per claim 7, Copeland does not explicitly disclose wherein said response comprises a system lockdown. However, this limitation is disclosed by Hrabik (col 7, lines 16-24).

Both Copeland and Hrabik are concerned with computer and network security. At the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art of computer and network security to modify Copeland's invention according to the limitations recited in claim 7 as per Hrabik's teachings. One skilled would have been motivated to do so because a system lockdown in response to an intrusion detection would minimize the amount of damage an intruder can cause to the system.

Claims 12 and 19 further recite a limitation substantially similar to what is recited in claim 7 and are rejected for much the same reasons discussed in claim 7.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Copeland III (US 2002/0144156) in view of Nickles (US 6,134,591).

Claim 13:

As per claim 13, Copeland does not explicitly disclose wherein said network port map verification tool is enabled to verify a digital signature related to said port authorization. However, Nickles discloses a security server enabled to verify a digital signature related to a access request (col 10, lines 10-38). Note that an access request

to a server typically includes the port number a client wishes to access or be authorized to access, thus access authorization is related to port authorization. As such the digital signature taught by Nickles is related to port authorization.

At the time applicant's invention was made, it would have been obvious to one of ordinary skill in the art to modify Copeland's invention according to the limitations further recited in claim 13 by incorporating the digital signature verification functions of the security server disclosed by Nickles within the network port map verification tool of Copeland's invention. One of ordinary skill would have been motivated to do so because it would allow Copeland's invention to verify the identity of the person making a connection request. This would enhance the security of networks protected by Copeland's invention since unauthorized port access could be prevented rather than just detected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ponnoreay Pich whose telephone number is 571-272-7962. The examiner can normally be reached on 9:00am-4:30pm Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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